

Effect of elevated CO₂ and high temperature on seed-set and grain quality of rice

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Supplementary Table S1. Effect of [CO₂] and temperature on growth and yield parameters of two rice genotypes and a hybrid. The mean sum of squares for the different traits affected by the treatments are presented. ***, ** and * indicate significance at 0.1%, 1% and 5% respectively.

Source of variation	Number of panicles	Root dry			Total plant		Number of spikelets		Seed	
	(g)	Root- weight	Shoot ratio	Stem dry weight (g)	Number of tillers	(g)	(panicle ⁻¹)	(%)	(panicle ⁻¹)	Seed weight (g)
Genotype	669.7***	115.9***	0.0548***	3204.9***	1290.7***	10639.7***	79545.5***	8809.6***	12380.8***	3.96***
Temperature	1.5	0.5	0.0004	0.3	1.3	171.4***	6958.3***	34278.3***	91236.1***	31.96***
CO ₂	740.6***	1068.4***	0.2509***	4189.1***	1121.8***	15251.1***	6916.7***	88.2*	2336.1**	1.62***
Genotype*Temperature	1.3	0.6	0.0006	0.4	1.1	26.9**	1184.9	1698.2***	7587.8***	3.31***
Genotype*CO ₂	36.6***	42.5***	0.0748***	142.5***	40.9***	444.8***	2296.9*	0.89	1235.7*	0.42***
Temperature*CO ₂	1.6	0.7	0.0003	0.6	1.6	6.7	4306.3***	22.91	3227.3***	1.49*
Genotype*Temperature*CO ₂	0.5	0.3	0.0002	0.2	0.6	5.3	2236.8**	24.24	1102.7**	0.43***
Residual	3.3	0.75	0.0017	4.2	3.5	6.7	538.1	17.61	269.1	0.09

Supplementary Table S2. Effect of ambient and elevated CO₂ with high temperatures coinciding with anthesis for five consecutive days on grain width and length, chalkiness and broken grain (excluding N22). ***, ** and * indicate significance at 0.1%, 1% and 5% respectively.

Source of variation	Grain width (cm)	Grain length (cm)	Chalk 10%	Chalk 50-75%	Broken grain
Genotype	0.6537***	7.756***	3595.77***	562.98***	69.37***
Temperature	0.0004	0.006	19.45	39.44	3.22
CO ₂	0.0506***	0.003	162.56	31.17	13.09**
Genotype*Temperature	0.0044	0.012*	60.17	15.92	1.12
Genotype*CO ₂	0.0013	0.000	43.4	9.24	0.50
Temperature*CO ₂	0.0001	0.002	103.95	37.28	1.61
Genotype.Temperature.CO ₂	0.0006	0.003	184.24	23.2	0.25